

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>PF-0709 PCT</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 00/16668</b>	International filing date (day/month/year) <b>16/06/2000</b>	(Earliest) Priority Date (day/month/year) <b>17/06/1999</b>
Applicant <b>INCYTE GENOMICS, INC.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

T/US 00/16668

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C12N5/10 C07K14/47 C07K14/705 C07K16/18  
C07K16/28 C12Q1/68 A61K38/17 G01N33/50 A01K67/027

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K C12Q A61K G01N A01K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
3 X	<p>DATABASE EM-HUM [Online] E.B.I., Hinxton, U.K.; Accession Number: AF151831, 1 June 1999 (1999-06-01) LAI C-H ET AL: "Homo sapiens CGI-73 protein mRNA, complete cds" XP002156357 99.083% identity in 1199 nt overlap with SeqIdNo.44 abstract</p> <p>--- -/--</p>	1-19,22, 25-27



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## ° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

4 January 2001

Date of mailing of the international search report

25. 04. 2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Lonnoy, 0

## INTERNATIONAL SEARCH REPORT

International Application No

T/US 00/16668

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
1 X	<p>DATABASE EM EST [Online]  E.B.I., Hinxton, U.K.;  Accession Number: AA628955,  28 October 1997 (1997-10-28)  HILLIER L ET AL: "af28g03.s1  Soares total fetus Nb2HF8 9w Homo sapiens  cDNA cTone IMAGE:1033012 3', mRNA  sequence"  XP002156358  100.000% identity in 534 nt overlap with  SeqIdNo.44  abstract</p> <p>---</p>	3-5, 11-15
2 E	<p>WO 00 58473 A (CURAGEN CORP ;LEACH MARTIN  (US); SHIMKETS RICHARD A (US))  5 October 2000 (2000-10-05)  SeqIdNo.5001: 99.9% identity in 2568 bp  overlap with SeqIdNo.44; SeqIdNo.5002:  97.9% identity in 336 aa overlap with  SeqIdNo.1</p> <p>---</p>	1-19,22, 25-27
2 E	<p>WO 00 37643 A (MEAGHER MADELEINE JOY  ;CORIXA CORP (US); WANG TONGTONG (US);  YUQIU) 29 June 2000 (2000-06-29)  SeqIdNo.48: 100.0% identity in 384 bp  overlap with SeqIdNo.44</p> <p>---</p>	1-19,22, 25-27
1 A	<p>WO 99 21885 A (ZHANG QING HUA ;SHANGHAI  SECOND MEDICAL UNIVER (CN))  6 May 1999 (1999-05-06)</p> <p>-----</p>	

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 00/16668

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see further information sheet invention group 1.

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claim : 1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/16668

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 0058473	A	05-10-2000	AU	3774500 A	16-10-2000
WO 0037643	A	29-06-2000	AU	2387900 A	12-07-2000
WO 9921885	A	06-05-1999	NONE		

P<sup>A</sup>TENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

Date of mailing (day/month/year) 13 July 2001 (13.07.01)	
International application No. PCT/US00/16668	Applicant's or agent's file reference PF-0709 PCT
International filing date (day/month/year) 16 June 2000 (16.06.00)	Priority date (day/month/year) 17 June 1999 (17.06.99)
Applicant LAL, Preeti et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

08 January 2001 (08.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer H. Zhou Telephone No.: (41-22) 338.83.38
---	---

## P A T E N T COOPERATION T R E A T Y

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

HAMLET-COX, Diana  
Incyte Genomics, Inc.  
3160 Porter Drive  
Palo Alto, CA 94304  
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 11 juillet 2001 (11.07.01)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference PF-0709 PCT	
International application No. PCT/US00/16668	International filing date (day/month/year) 16 juin 2000 (16.06.00)

## 1. The following indications appeared on record concerning:

☒ the applicant      ☒ the inventor      ☐ the agent      ☐ the common representative

Name and Address BURFORD, Neil 1308 4th Avenue San Francisco, CA 94122 United States of America	State of Nationality GB	State of Residence US
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person      ☐ the name      ☒ the address      ☐ the nationality      ☐ the residence

Name and Address BURFORD, Neil 105 Wildwood Circle Durham, CT 06422 United States of America	State of Nationality GB	State of Residence US
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input checked="" type="checkbox"/> the designated Offices concerned
<input checked="" type="checkbox"/> the International Searching Authority	<input type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  Sean Taylor  Telephone No.: (41-22) 338.83.38
--	---



## PCT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

HAMLET-COX, Diana  
Incyte Genomics, Inc.  
3160 Porter Drive  
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ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 11 juillet 2001 (11.07.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference PF-0709 PCT	
International application No. PCT/US00/16668	International filing date (day/month/year) 16 juin 2000 (16.06.00)

## 1. The following indications appeared on record concerning:

☒ the applicant      ☒ the inventor      ☐ the agent      ☐ the common representative

## Name and Address

BURFORD, Neil  
1308 4th Avenue  
San Francisco, CA 94122  
United States of America

## State of Nationality

GB

## State of Residence

US

Telephone No.

Facsimile No.

Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person      ☐ the name      ☒ the address      ☐ the nationality      ☐ the residence

## Name and Address

BURFORD, Neil  
105 Wildwood Circle  
Durham, CT 06422  
United States of America

## State of Nationality

GB

## State of Residence

US

Telephone No.

Facsimile No.

Teleprinter No.

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

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<input checked="" type="checkbox"/> the International Searching Authority	<input type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Sean Taylor

Telephone No.: (41-22) 338.83.38

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
28 December 2000 (28.12.2000)

PCT

(10) International Publication Number  
**WO 00/78953 A3**

(51) International Patent Classification: C12N 15/12,  
5/10, C07K 14/47, 14/705, 16/18, 16/28, C12Q 1/68,  
A61K 38/17, G01N 33/50, A01K 67/027

(21) International Application Number: PCT/US00/16668

(22) International Filing Date: 16 June 2000 (16.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/139,923 17 June 1999 (17.06.1999) US  
60/148,177 10 August 1999 (10.08.1999) US  
60/149,357 18 August 1999 (18.08.1999) US  
60/162,287 28 October 1999 (28.10.1999) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:  
US 60/139,923 (CIP)  
Filed on 17 June 1999 (17.06.1999)  
US 60/148,177 (CIP)  
Filed on 10 August 1999 (10.08.1999)  
US 60/149,357 (CIP)  
Filed on 18 August 1999 (18.08.1999)  
US 60/162,287 (CIP)  
Filed on 28 October 1999 (28.10.1999)

(71) Applicant (for all designated States except US): INCYTE GENOMICS, INC. [US/US]; 3160 Porter Drive, Palo Alto, CA 94304 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LAL, Preeti [IN/US]; 2382 Lass Drive, Santa Clara, CA 95054 (US). YANG, Junming [CN/US]; 7125 Bark Lane, San Jose, CA 95129 (US). YUE, Henry [US/US]; 826 Lois Avenue, Sunnyvale, CA 94087 (US). HILLMAN, Jennifer, L. [US/US]; 230 Monroe Drive, #12, Mountain View, CA

94040 (US). TANG, Y., Tom [CN/US]; 4230 Ranwick Court, San Jose, CA 95118 (US). BANDMAN, Olga [US/US]; 366 Anna Avenue, Mountain View, CA 94043 (US). BURFORD, Neil [GB/US]; 105 Wildwood Circle, Durham, CT 06422 (US). BAUGHN, Mariah, R. [US/US]; 14244 Santiago Road, San Leandro, CA 94577 (US). AZIMZAI, Yalda [US/US]; 2045 Rocksprings Drive, Hayward, CA 94545 (US). LU, Dyung, Aina, M. [US/US]; 55 Park Belmont Place, San Jose, CA 95136 (US). AU-YOUNG, Janice [US/US]; 233 Golden Eagle Lane, Brisbane, CA 94005 (US). PATTERSON, Chandra [US/US]; 490 Sherwood Way, #1, Menlo Park, CA 94025 (US).

(74) Agents: HAMLET-COX, Diana et al.; Incyte Genomics, Inc., 3160 Porter Drive, Palo Alto, CA 94304 (US).

(81) Designated States (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:  
17 January 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

RECEIVED

NOV 14 2002

TECH CENTER 1600/LU

(54) Title: HUMAN TRANSPORT PROTEINS

(57) Abstract: The invention provides human transport proteins (TPPT) and polynucleotides which identify and encode TPPT. The invention also provides expression vectors, host cells, antibodies, agonists, and antagonists. The invention also provides methods for diagnosing, treating, or preventing disorders associated with expression of TPPT.

WO 00/78953 A3